material, said lower cylindrical collar of said fitting permanently securing said upper end of said filter sleeve, and said upper flange of said fitting overlying said tube sheet adjacent said circular opening to suspendingly support the filter cartridge from said tube sheet;

whereby, when said filter cartridge is installed in said tube sheet, said fitting deformably contacts said tube sheet on at least portions of the three tube sheet surfaces to affect sealing engagement therewith such that at least a portion of said flange of said fitting seals with at least a portion of said upper surface of said tube sheet adjacent said circular opening, said tube sheet mouth insert of said fitting seals with said cylindrical mouth surface of said tube sheet, and at least a portion of said contoured transition of said fitting seals with at least a portion of said lower surface of said tube sheet adjacent said circular opening.

C3 cont.

Remarks

Applicant notes with appreciation the Examiner's indication that Claims 12-16 are directed to allowable subject matter. Claims 12 and 14 are amended herein to independent form and it is believed that Claims 12-16 are in condition for formal allowance. Claim 17 is a new claim but it is simply a permutation of the same features the Examiner indicated as allowable in Claims 12-16 and, therefore, it is believed that Claim 17 is also in condition for formal allowance. Applicant submits herewith a check in the amount of $84.00 to cover the independent claims in excess of 3.

In the last Office Action, claims 1-11 are rejected under 35 USC 102(e) as being anticipated by Brunner U.S. 5,964,909. The rejection is respectfully traversed.

For good and sufficient reasons previously made of record in this prosecution history, Brunner is not an effective prior art reference against the present application. The Examiner has not found those reasons to be persuasive. Applicant has previously filed the "Combined Declaration

under 37 CFR 1.131 and 37 CFR 1.132" of Jack T. Clements dated April 11, 2002 to establish that the subject matter set forth in each of the Claims 1-11 of the application was invented at least before the effective filing date of September 4, 1998 of the Brunner U.S. Patent No. 5,964,909 which issued October 12, 1999. Said Declaration was further supported by an assembly sketch (Exhibit A) and production drawings (Exhibits B-D) all dated before the effective date of Brunner. Specifically, the assembly sketch Exhibit A illustrated a tubular metal insert installed in the mouth of the filter cartridge to effect a friction fit seal between the tube sheet opening and the resiliently deformable, molded top of the filter cartridge. The production drawings Exhibits B-D showed dimensional details of similar tubular metal inserts for installation in the mouth of various sized filter cartridges to effect a friction fit seal between the tube sheet opening and the resiliently deformable, molded top of the filter cartridge.

In the last Office Action dated June 18, 2002, the Examiner has indicated that the foregoing evidence has been reviewed but is ineffective to overcome the Brunner reference. The Examiner has made the following comments addressing the Exhibits A-D and the various structural features at issue in the case:

> The Examiner thoroughly examines the sketch (exhibit A) as well as all the submitted exhibits B, C & D, but find none of these exhibits discloses the claimed feature 'a tubular fitting including a flange extending above the tube sheet having a tube sheet mouth insert, a contoured transition, a lower cylindrical collar extending beneath the tube sheet all integrally formed of flexible, resiliently deformable material, and a tubular expander with an insertable band including an outer diameter substantially equal to or less than the inner diameter of the flange of the fitting, and the band configured to engage interiorly the frusto-conical portion of the contoured transition of the fitting proximate the circular opening through the tube sheet to outwardly bias portions of the resiliently deformable fitting to affect sealing engagement with the cylindrical mouth surface of the tube sheet'.

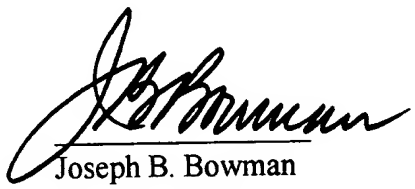
Neither applicant nor its attorney is able to understand why the Examiner is making the foregoing statements and apparently is not finding the corresponding structure in the previously submitted Exhibit A. We can only speculate that either (1) we are not looking at the same sketch, or (2) what is shown in Exhibit A is somehow being interpreted differently by the Examiner. In order to remove any doubt or confusion regarding the foregoing Exhibits, Mr. Clements has prepared and submits herewith a fresh Declaration, some of which repeats the statements and references to Exhibits A-D contained in his previous declaration. Fresh copies of Exhibits A-D are also attached in case the wrong papers were previously filed.

Additionally, Exhibit E has been prepared and attached to the Clements Declaration as a new exhibit formed from an enlarged copy of the sketch in Exhibit A to which color highlights have been added. The Clements Declaration sets forth the specific structural feature referenced in the Examiner's foregoing comments and indicates the color used to outline that particular feature in Exhibit E. It is respectfully submitted that all features mentioned by the Examiner are specifically found in the original sketch (Exhibit A) dated May 22, 1995 which predates Brunner.

The Clements Declaration, together with the attached Exhibits A-E, clearly demonstrates that the subject matter set forth in each of the Claims 1-11 of the application was invented at least before the filing date of September 4, 1998 of the Brunner U.S. Patent No. 5,964,909. Thus, Brunner is not an effective prior art reference against the subject application.

In view of the foregoing amendment and remarks, it is believed that this case is in condition to pass to publication. Such action in the regular course of business is solicited.

Respectfully submitted,



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Version with markings to show changes made.

In the Claims:

Please amend Claim 12 as follows.

12. (Amended) [The unitary filter cartridge as in Claim 11,] A unitary filter cartridge to be removably and sealingly received within a circular opening through a tube sheet separating the clean and dirty plenums of filtration apparatus, said tube sheet having an upper surface, a cylindrical mouth surface and a lower surface, said filter cartridge comprising:

a filter sleeve formed as a tubular member having an open upper end oriented toward said tube sheet and an open lower end oriented away from said tube sheet;

a tubular screen positioned interiorly of said filter sleeve for structural support thereof, said tubular screen having an open upper end oriented toward said tube sheet and an open lower end oriented away from said tube sheet;

a bottom end cap sealingly secured to the lower end of said filter sleeve to close said lower end of said filter sleeve; and

a unitary tubular, upper fitting including an upper flange extending above said tube sheet and overlying said tube sheet adjacent said circular opening to suspendingly support the filter cartridge from said tube sheet, a tube sheet mouth insert, a contoured transition and a lower cylindrical collar extending beneath said tube sheet all integrally formed of flexible, resiliently deformable material, said lower cylindrical collar of said fitting permanently securing said upper end of said filter sleeve;

said upper flange of said fitting having an outermost circumferential edge with voids therein, and said contoured transition of said fitting being formed interiorly in a frusto-

conical vertical cross-section and exteriorly in a substantially uniform cylindrical vertical cross-section with a diameter less than or equal to the diameter of said circular opening to permit said transition to pass through said circular opening of said tube sheet during installation; and

a tubular expander with an insertable band including an outer diameter substantially equal to or less than the inner diameter of said upper flange of said upper fitting, said band configured to engage interiorly said frusto-conical portion of said contoured transition of said fitting proximate said circular opening through said tube sheet to outwardly bias portions of the resiliently deformable fitting to affect sealing engagement with said cylindrical mouth surface of said tube sheet and with at least a portion of said lower surface of said tube sheet adjacent said circular opening;

said tubular expander further including a flange ring integrally joined to the upper end of said insertable band to overlie said upper flange of said upper fitting and to overlie said voids in the outermost circumferential edge of said upper flange when said filter cartridge is installed in said tube sheet to affect sealing engagement between at least a portion of said flange of said fitting with at least a portion of said upper surface of said tube sheet adjacent said circular opening, and adjacent said voids in the outermost circumferential edge of said upper flange to provide a tool access between the flange ring of said expander and the upper surface of the tube sheet to facilitate removal of said expander from engagement with said upper fitting for removing said filter cartridge from said tube sheet;

whereby, when said filter cartridge is installed in said tube sheet, said fitting deformably contacts said tube sheet on at least portions of the three tube sheet surfaces to

affect sealing engagement therewith such that at least a portion of said flange of said fitting seals with at least a portion of said upper surface of said tube sheet adjacent said circular opening, said tube sheet mouth insert of said fitting seals with said cylindrical mouth surface of said tube sheet, and at least a portion of said contoured transition of said fitting seals with at least a portion of said lower surface of said tube sheet adjacent said circular opening.

Please amend Claim 14 as follows.

14. (Amended) A unitary filter cartridge to be removably and sealingly received within a circular opening through a tube sheet separating the clean and dirty plenums of filtration apparatus, said tube sheet having an upper surface, a cylindrical mouth surface and a lower surface, said filter cartridge comprising:

a filter sleeve formed as a tubular member having an open upper end oriented toward said tube sheet and an open lower end oriented away from said tube sheet;

a tubular screen positioned interiorly of said filter sleeve for structural support thereof, said tubular screen having an open upper end oriented toward said tube sheet and an open lower end oriented away from said tube sheet;

a bottom end cap sealingly secured to the lower end of said filter sleeve to close said lower end of said filter sleeve, [The unitary filter cartridge as in Claim 1,] said bottom end cap [sealingly secured to the lower end of said filter sleeve] comprising a substantially cylindrical disk having an outside diameter greater than the diameter of said filter sleeve and being formed of flexible, resiliently deformable material, and a circumferential groove in said cylindrical disk which extends inwardly from the outside diameter of said disk to diameter at the bottom of said groove which corresponds to the outside diameter of said

filter sleeve to concentrically align said filter sleeve with respect to said bottom end cap; and

a unitary tubular, upper fitting including an upper flange extending above said tube sheet, a tube sheet mouth insert, a contoured transition and a lower cylindrical collar extending beneath said tube sheet all integrally formed of flexible, resiliently deformable material, said lower cylindrical collar of said fitting permanently securing said upper end of said filter sleeve, and said upper flange of said fitting overlying said tube sheet adjacent said circular opening to suspendingly support the filter cartridge from said tube sheet;

whereby, when said filter cartridge is installed in said tube sheet, said fitting deformably contacts said tube sheet on at least portions of the three tube sheet surfaces to affect sealing engagement therewith such that at least a portion of said flange of said fitting seals with at least a portion of said upper surface of said tube sheet adjacent said circular opening, said tube sheet mouth insert of said fitting seals with said cylindrical mouth surface of said tube sheet, and at least a portion of said contoured transition of said fitting seals with at least a portion of said lower surface of said tube sheet adjacent said circular opening.

Please add the following new claim.

17. A unitary filter cartridge to be removably and sealingly received within a circular opening through a tube sheet separating the clean and dirty plenums of filtration apparatus, said tube sheet having an upper surface, a cylindrical mouth surface and a lower surface, said filter cartridge comprising:

a filter sleeve formed as a tubular member having an open upper end oriented toward said tube sheet and an open lower end oriented away from said tube sheet;

a tubular screen positioned interiorly of said filter sleeve for structural support

thereof, said tubular screen having an open upper end oriented toward said tube sheet and an open lower end oriented away from said tube sheet;

a bottom end cap sealingly secured to the lower end of said filter sleeve to close said lower end of said filter sleeve, said bottom end cap comprising a substantially cylindrical disk having an outside diameter greater than the diameter of said filter sleeve and being formed of flexible, resiliently deformable material, and having a lower surface which extends beneath the lowermost end of said filter sleeve, and vertical grooves which extend upwardly from said lower surface to the lowermost end of said filter sleeve to vertically position said filter sleeve with respect to said bottom end cap; and

a unitary tubular, upper fitting including an upper flange extending above said tube sheet, a tube sheet mouth insert, a contoured transition and a lower cylindrical collar extending beneath said tube sheet all integrally formed of flexible, resiliently deformable material, said lower cylindrical collar of said fitting permanently securing said upper end of said filter sleeve, and said upper flange of said fitting overlying said tube sheet adjacent said circular opening to suspendingly support the filter cartridge from said tube sheet;

whereby, when said filter cartridge is installed in said tube sheet, said fitting deformably contacts said tube sheet on at least portions of the three tube sheet surfaces to affect sealing engagement therewith such that at least a portion of said flange of said fitting seals with at least a portion of said upper surface of said tube sheet adjacent said circular opening, said tube sheet mouth insert of said fitting seals with said cylindrical mouth surface of said tube sheet, and at least a portion of said contoured transition of said fitting seals with at least a portion of said lower surface of said tube sheet adjacent said circular opening.